fluoroquinolones and the carbapenems. In some countries, such as Argentina, the situation has become so bad that they are already beginning to encounter totally resistant clinical strains of *Acinetobacter*. This study investigates the activity of seven fluoroquinolones, including the new quinolones moxifloxacin and trovafloxacin, against 41 multiresistant *A. baumannii* clinical isolates from Argentina, Spain, Turkey and Hong Kong. Fifty-six per cent of these strains have previously been determined as imipenem resistant, and they represent some of the most resistant clinical Gram-negative bacteria isolated to date. Minimum inhibitory concentrations (MICs) were determined by the agar dilution method, with the exception of levofloxacin, which was tested by the Stokes method. At standard breakpoints, there was significant resistance among these strains to ciprofloxacin (68%), norfloxacin (78%) and grepafloxacin (49%). Disk sensitivity tests revealed that 56% of the strains were resistant to levofloxacin. The least active antibiotic was norfloxacin, with the highest MIC_{50} and MIC_{90} values (256 mg/L for both). Sparfloxacin, moxifloxacin and trovafloxacin were the most active (resistance rates of 14.6%, 14.6% and 9.7% respectively), with similar MIC_{50} and MIC_{90} values. These newer fluoroquinolones were originally developed to treat Gram-positive bacteria but these results demonstrate the possibility of a much needed role for these drugs in the treatment of severe Gram-negative infections caused by multiresistant *Acinetobacter baumannii*.

Laboratory diagnosis: Automation II

P817 Comparison of the Fan and Standard Bact/Alert blood culture media for the recovery of *Brucella melitensis*

A. Agulla, M. Rodriguez-Mayo, M. Pereira, M. Fernandez. *Microbiologia, C.H.A. Marcide Ferrol, Spain*

Objectives: To compare the recovery of *Brucella melitensis* by the Fan and Standard BacT/Alert culture media.

Methods: Ten strains of *B. melitensis* isolated from patients with acute brucellosis and the reference strain *B. melitensis* ATCC 23456 were analyzed. A suspension in sterile brucella broth at MacFarland 0.5 density (10^8 CFU/mL) was prepared from an overnight growth of each organism, and serial dilutions were performed to obtain 10^3, 10^2 and 10^1 CFU/mL inocula. Then 99 Fan bottles and 99 Standard bottles were inoculated with 1 mL of these three inocula in triplicate. Five mL of human blood were added to all media bottles, which were vented prior to loading into the BacT/Alert system. Bottles were incubated for 21 days or until the instrument signaled that they were positive. All negative bottles were terminally subcultured. Controls of inocula and blood were performed.

Results: 55 of 99 bottles were positives from the Fan media with the instrument; however, all 44 negative bottles were positives in terminal subcultures. 94 of 99 bottles were positives from the Standard media in the instrument, 10 of them contaminated. All five negative Standard bottles in the instrument were positive in terminal subculture. Detection times, media 48 h, did not differ significantly between both media.

Conclusions: The Fan and Standard media were comparable in their abilities to recover *B. melitensis;* however, the BacT/Alert System did not detect the microorganism in all cases. We recommend the Standard media when brucellosis is suspected, and perform subcultures in these cases.

P818 Value of BACTEC blood culture bottles for specimens other than blood

A.C. Vautrin, A. Carricajo, N. Fonsale, G. Aubert. *Bacteriology Department, Bellevue Hospital, St Etienne, France*

Objectives: To define the microbiological value of BACTEC blood culture bottles for specimens other than blood.

Methods: From July 1997 to August 1998, 501 clinical specimens were examined, using both standard bacterial culture and blood culture bottles (BACTEC Plus Aerobic/F and BACTEC Lytic/10 Aerobic/F, Becton Dickinson). The specimens examined comprised aspiration fluids (372), deep abscess isolates (38) and other samples (91). The microbiological analysis involved direct microscopic examination, as well as standard aerobic and anaerobic bacterial culture. The blood culture bottles were placed in the Bactec 9240 incubator.

Results: 93/501 specimens (18.5%) were positive in culture, 81/93 being positive both in standard culture and in blood culture bottles. 55/501 specimens (10.9%) were positive only in the blood culture bottles. The 62 microorganisms recovered from the 55 specimens were contaminants (16 bacteria) and pathogens (11 anaerobic bacteria, 3 yeasts, 5 enterobacteria, 9 streptococci, 15 staphylococci, 1 *P. aeruginosa*, 1 *S. maltophilia*, 1 *Lactobacillus*, 1 *Corynebacterium*). 16/30 aerobic bottles were positive with significant pathogens: 10/16 (62%) were inoculated with specimens which under microscopy demonstrated neutrophils and no bacteria, and 13/16 (81%) were from patients receiving antibiotics at the time of sampling. 38/44 anaerobic bottles were positive for pathogens: 25/38 (65%) were inoculated with specimens showing neutrophils but no bacteria at microscopy and 17/38 (44%) were from patients receiving antibiotics at the time of sampling.

Conclusions: The use of paired aerobic-BACTEC blood bottles improves conventional culture sensitivity, particularly for samples showing neutrophils but no bacteria at microscopy, as well as for samples from patients receiving antibiotics.

P819 Usefulness of MYCO/F Lytic Blood Culture System in a clinical laboratory: a preliminary report

J. Esteban, A. Molleja, R. Fernández-Roblas, M. Jiménez-Arriero, F. Soriano. *Department of Medical Microbiology, Fundación Jiménez Díaz, Madrid, Spain*

Objectives: To evaluate the microbiological and clinical significance of results obtained with the use of the MYCO/F lytic system in a clinical laboratory.

Methods: Results of blood cultures (MYCO/F lytic, BBL) sent for mycobacterial culture between 1 April 1997 and 15 September 1998 were reviewed. Positive bottles were inoculated in a Lowenstein–Jensen slant, a Middlebrook 7H 11 plate and a Tryptic soy blood agar plate. All media were incubated at 37°C and read twice weekly for 8 weeks. 1.5 mL of liquid were also centrifuged and Ziehl–Neelsen and Gram stains were also performed from the sediment.

Results: During the study period, 225 blood cultures were processed and 14 of them (6.2%) grew any species of mycobacteria. The species isolated were *M. avium* (8 samples, 2 patients), and *M. tuberculosis* (6 samples, 4 patients). We also detected true bacteremia due to *K. pneumoniae* (1 sample), coagulase-negative *Staphylococcus* (CNS) (2 samples from 1 patient) and *S. enteritidis* (2 samples from 1 patient). In 10 bottles (4.4%) the organisms recovered (5 CNS, 3 *Corynebacterium* sp. and 2 with both CNS and *Corynebacterium* sp.) were evaluated as 'contaminants'. 15 bottles were read as positive, but no organism could be detected, being considered as false positives. The average time for detection of mycobacteria was 21.73 days (13.7

days for *M. avium* (range 6–24) and 28.8 for *M. tuberculosis* (range 14–46)).

Conclusions: MYCO/F lytic blood culture system is a simple and useful tool for detection of mycobacteremia in a clinical laboratory. Other bacteria can also be detected with this system.

P820 Evaluation of an automated blood culture system and laboratory services regarding the diagnostic speed

S. Smilakou, M. Matsaka, I. Stefanou, P. Zoga, E. Demertzi, A. Avlami. *Department of Microbiology, 'Laikon' General Hospital, Athens, Greece*

Objectives: To determine the diagnostic speed in cases of bacteremia combining an automated blood culture (BC) system with a rapid 24-h loading routine in our laboratory.

Methods: A total of 12 820 sets of BC were investigated retrospectively in a 2-year study. An average of three sets were collected per patient according to standard methodology. All bottles were loaded into Bactalert BC system (Organon-Teknika). The laboratory has the capability of accepting specimens and processing them from the inpatients of a teaching hospital throughout the 24 h.

Results: The overall positives were 1790 out of 12 820 sets (13.95%). The false positives were 379 (2.95%). The number of contaminated ones was 335 (2.6%). The true positives were 1455 (11.35%). The mean unloading delay was 1 h 42 min. The mean machine detection time for the major groups of isolates was for (1) Gram-negative bacteria 21.7 h, (2) Gram-positive cocci 24.5 h, (3) *Candida* sp. 37.12 h, (4) *Brucella* 72 h, (5) anaerobes 43.85 h. The mean turn-around time for the preliminary answer was 29 h 48 min, and for the final answer for the majority of isolates less than 3 days.

Conclusions: (1) Continuous monitoring of BC bottles with an automated BC system accelerates the diagnostic speed when it is combined with 24-h loading and with laboratory services availability. (2) The kind of blood isolate is critical for the turn-around time of the preliminary and the final answer. (3) Further decrease of this time could be possible with the delay minimization in loading and unloading of the bottles and with the implementation of new rapid techniques for identification and susceptibility testing.

P821 M-Lab System—a new tool for automation of microbiological data collection, analysis and storage

B. Makushkin, A. Dekhnitch, L. Stratchounski. *State Medical Academy, Smolensk, Russia*

Objectives: To develop computer software for automation of microbiological data collection, analysis and storage.

Methods: M-Lab software is based on the relation model of data presentation. Strain information, serologic, biochemical data, susceptibility testing results, etc. are presented in the linked tables. M-Lab functions as an interactive system between the individual users and the data storage base. One of the distinctive features of M-Lab is the possibility of interacting with other software. M-Lab can be implemented by several methods. On-line method: user requests are accepted by the Web-server and transmitted to the data storage base of M-Lab, which processes the data and generates the answers in HTML format. Off-line method: user requests are formulated in electronic message format and sent to the M-Lab demon, which selects and transforms entry information, re-addresses requests to the data storage base of M-Lab and generates an answer in electronic message format. Translation method: entry of data is provided by data translation from WHONET, BioMic and SAS software.

Results: The M-Lab system functions on the basis of APACHE Web-server with an SQL-server PostgreSQL in the main programming language Perl. Interface is provided by DBI::DBD modules (Perl), LIBPQ (C), ODBC (Windows applications). Preference is given to the Netscape Web-browser 4.XX.

Conclusions: A selected system of construction and realization of the M-Lab system allows request management with the lowest creation complexity and provides excellent data storage facilities for information from different sources. It is also quite easy to add new modules for data translation, to follow the requests independently of request site and to export the data into microbiological information management systems.

P822 Work-flow Analysis of VITEK 2 versus WALK-a-WAY

W.H.F. Goessens, H.J.A. van Vliet, H.A. Verbrugh. *Medical Microbiology and Infectious Diseases, Erasmus University Medical Center Rotterdam, Rotterdam, The Netherlands*

VITEK 2 from bioMérieux is a new and rapid identification and susceptibility determination system which has a high degree of automation. Furthermore, the time for the final identification report for Gram-positive cocci has been reduced to 2 h and for Gram-negative rods to 3 h. In the present study the reduction in manual handling and the impact on the work-flow of VITEK 2 is evaluated versus the semi-automated instrument WAW. All steps needed to prepare the inocula and to operate the instruments were clocked separately. To mimick a routine setting, three different isolate charges, i.e. 15, 20 and 30 isolates per run, were evaluated, consecutively and in triplicate, giving rise to a total of 195 isolates. Calculation of the mean time needed to operate and handle one specimen is 56 s in the VITEK 2 and 135 s in the WAW, respectively. Extrapolation of this technical handling time to process 100 isolates in VITEK 2 or WAW takes 1.5 h and 3.8 h, respectively.

The accuracy of identification for both systems was evaluated by using the API system as the method of reference. 81 Enterobacteriaceae, 30 non-fermenters, 24 streptococci and 58 staphylococci were analyzed resulting in sensitivities for VITEK 2 and WAW of 93.8%, 93.3%, 91.7% and 98.3%, and 90.0%, 90.0%, 83.3% and 84.5%, respectively. In conclusion, the accuracy of identification of the VITEK 2 system together with the significant reduction in handling time will have a positive impact on the work-flow of the clinical microbiology laboratory.

P823 Preliminary evaluation and overview of Phoenix, a new automated ID/AST system

J. Reuben, N. Bachur, R. Novak, R. Armstrong, T. Sullivan, T. Borgoyn. *Research and Development, Becton Dickinson Microbiology Systems, Sparks, MD, USA*

Objectives: To evaluate the Phoenix system (Becton Dickinson Microbiology Systems, MD, USA), a new automated rapid identification and susceptibility test system intended for Gram-positive and Gram-negative clinically relevant bacteria.

Methods: Three Phoenix prototype instruments were evaluated for technical concept, performance in terms of workflow, reliability, reproducibility and time to results. Performance was compared in parallel testing to reference procedures as relevant. Sixteen representative antimicrobial agents were tested with a challenge set of 248 Gram-negative and 246 Gram-positive isolates as appropriate.

Results: The Phoenix system can test up to 100 identification and susceptibility test combination panels, each of which contains a total of 136 wells (up to 85 AST and 51 ID). Reproducibility of signal was determined to be <1.0% and <1.5% coefficient of variation for visible and UV signals respectively. Essential accord (EA) with reference methods for agents (10) indicated for *Staphylococcus* and *Enterococcus* species ranged from 91% to 100%. EA for agents (indicated for Enterobacteriaceae and pseudomonads) ranged from 86% to 100 %, with the exception of two agents. The average time to results was 6 h for Gram-positive and 6–12 h for Gram-negative organisms. Excellent discrimination with different classes of substrates for identification of Gram-negative bacilli as well as Gram-positive cocci and bacilli was achieved within 2–4 h.

Conclusions: Preliminary evaluations of the Phoenix system indicate that this new automated system can provide rapid and reliable identification and susceptibility test results with an improved workflow in the clinical laboratory.

P824 Identification of Gram-negative bacteria in the Phoenix System

J. Salomon, A. Butterworth, V. Almog, J. Pollitt, W. Williams. *Becton Dickinson Microbiology Systems, Sparks, MD, USA*

Objectives: To evaluate ability of the Phoenix System to rapidly identify aerobic Gram-negative bacilli without supplemental tests.

Methods: Conventionally referenced strains from 125 different species of Gram-negative bacilli, including glucose fermenters (75) and glucose non-fermenters (50), were evaluated in Phoenix test panels. The test panels consisted of 45 biochemical substrates composed of carbohydrates, fluorogens, carbon sources, chromogens, and miscellaneous tests. All panels were tested with an inoculum concentration equivalent to a 0.5 McFarland standard. Data from the Phoenix instrument were collected and analyzed at various time points with different algorithms to determine the ability of the substrates to effectively distinguish the different species.

Results: The majority of substrates in all classes showed good reactivity and differentiation with Enterobacteriaceae in as little as 2–3 h. The non-fermenters exhibited similar results in 2–4 h. Traditionally difficult 'non-reactive' organisms (such as *Pseudomonas* spp., *Comamonas* spp., *Oligella* spp., etc.) also showed reactivity, including discriminatory potential, in 4 h or less. Reproducibility of distinct substrate classes was found acceptable by replicate testing of several lots. In addition, system robustness allows for increased separation capabilities through flexible threshold selection which can be individually 'customized'. **Conclusions:** The Phoenix System shows excellent potential to rapidly identify nearly 125 different species of Gram-negative bacilli in 2–4 h without additional tests.

P825 Evaluation of the Rapid ID 32 STREP System

T.G. Jensen, H.B. Konradsen, B.G. Bruun. *Department of Clinical Microbiology, State Serum Institute, Copenhagen, Denmark*

Objectives: To evaluate the performance of the Rapid ID 32 Strep System (ID 32 Strep) in the hands of clinical microbiologists without expert knowledge of streptococci and related genera.

Methods: 122 strains of streptococci and enterococci conventionally identified in a reference laboratory were blinded and examined with the ID 32 Strep by two clinical microbiologists without expert knowledge of streptococci and enterococci. Reading and identification were done automatically and visually with the aid of identification tables provided by the manufacturer.

Results: Regardless of whether automatic or visual readings were done, about 76% of the 122 examined strains were correctly identified using the ID 32 Strep, 17% were misidentified and 7% were either not identified or showed low discrimination between two or more species. The system identified the majority of enterococci and pyogenic streptococci correctly. In the area where rapid and correct identification by commercial systems is most needed, i.e. the viridans streptoccoci, the system was only able to identify about two thirds of the examined strains.

Conclusions: In a routine laboratory the Rapid ID 32 Strep system can be used to give a rapid preliminary identification of streptococci and enterococci, but among viridans streptococci one would have to accept a certain risk of misidentification. The assay can, however, be used to biotype viridans streptococci in order to attempt to establish identity between separate isolates, e.g. from blood in patients suspected for endocarditis.

P826 Comparison of the new automated VITEK 2 with manual rapid crystal and agar diffusion for *Enterobacteriaceae*

U. Eigner, D. Schuhmacher, A. Caganic, A.-M. Fahr. *Laboratory Group, Department of Microbiology, Heidelberg, Germany*

Objectives: Identification and susceptibility performance of the VITEK 2 system (bioMérieux, Nürtingen) were evaluated for strains belonging to the Enterobacteriaceae. The results were compared to Rapid Crystal (Becton Dickinson, Heidelberg) and agar diffusion methods.

Methods: 274 strains of Enterobacteriaceae were tested, including the following species: *Escherichia coli*, *Klebsiella* spp., *Proteus* spp., *Citrobacter* spp., *Serratia* spp., *Morganella morganii* and *Providencia rettgeri*. The 12 antibiotics determined were as follows: ampicillin, amoxycillin/clavulanic acid, piperacillin/tazobactam, cephalotin, cefotaxime, cefoxitine, ceftazidime, imipenem, amikacin, gentamicin, ofloxacin and ciprofloxacin. Susceptibility test results are reported as category units (sensitive (S), intermediate (I), and resistant (R)) according to NCCLS recommendations. Discrepant results in susceptibility tests were compared to agar dilution, following NCCLS standard method M7-A4. Discrepant results in identification were solved utilizing the API system of bioMérieux.

Results: The mean-time-to-result for the VITEK2 system was 3 h for identification and 6 h 15 min for susceptibility testing. Referring to susceptibility testing, we found 222 discrepancies out of 3288 (6.75%) tests performed with both methods in total. Minor discrepancies exceeding 10% and all major discrepancies were repeated and compared to agar dilution test. With the 274 identification tests performed, 241 (88%) were correctly identified by both methods.

Conclusions: The new VITEK 2 system is able to perform accurate identification and susceptibility of Enterobacteriaceae using the most clinically relevant antibiotics.

P827 Comparison of the Vitek System and other methods in species identification and antimicrobial susceptibility testing of staphylococcal strains

J. Krzysztoń-Russjan, J. Walory, K. Nowak. *Sera and Vaccines Central Research Laboratory, Warsaw, Poland*

Objectives: To evaluate the usefulness of the Vitek System (bioMérieux) for identification and antimicrobial susceptibility testing of *Staphylococcus* spp.

Methods: Vitek system was used for identification and susceptibility testing of 50 coagulase-negative staphylococcal (CNS) strains and 36 *S. aureus* strains. Susceptibility was tested with GPS-SV cards; identification of CNS strains was performed with GPI cards. In parallel, the same strains were identified using the ID 32 Staph ATB test (bioMérieux) and their susceptibility was tested by the disk diffusion NCCLS method. Identification of *S. aureus* was performed with coagulase tube test and the *mecA* gene was detected by PCR.

Results: Results of the susceptibility testing: Vitek Disk diffusion (after 8 h) (after 20 h) Antimicrobials Concordance R S I R S I (%) Oxacillin 76 10 - 75 11 – 98.7 Penicillin 80 6 - 81 5 – 98.8 Ciprofloxacin 50 35 1 51 34 1 97.7 Clindamycin 52 33 1 54 32 – 98.8 Erythromycin 62 18 6 66 18 2 96.5 Tertracycline 45 27 14 53 23 10 81.4 Trimethoprim- 25 61 - 24 62 – 98.8 SulfamethoxazoleVancomycin - 86 - - 86 – 100.0 Identification of *S. haemolyticus*, *S. epidermidis* and *S. cohnii* was 100% concordant by both methods, 3 CNS strains were identified in a different way, and in one case Vitek has not finished the identification process.

Conclusions: Vitek was found to be a reliable, fast and easy method to determine antimicrobial susceptibility of staphylococci and also useful in identification of CNS.

P828 Evaluation of an automated bacteriuria screening system

R.A. Schiller, U.B. Göbel. *Institut für Mikrobiologie und Hygiene, Charité Berlin, Berlin, Germany*

Objectives: Evaluation of an automated bacteriuria screening system (Uro-Quick, Alifax, Padua, Italy) using laser scattering technique to detect bacterial growth.

Methods: A total of 1959 urinary samples, mainly from the departments of urology and nephrology and the intensive care unit of a university hospital were screened for bacteriuria in parallel by the Uro- Quick instrument and by the reference culture method. For sample collection and transport, novel Vacutainer (Becton Dickinson) cups and tubes containing boric acid were used. For analysis by the Uro-Quick system, 200 µL of urine was inoculated into broth vials, which were then incubated in the instrument. The samples were read every 5 min and growth was monitored by displaying the growth curves. The threshold was set at 10^4 CFU/mL, which corrresponds to an analysis time of 3 h and 15 min. For the reference method, 10 µL of urine was streaked onto agar plates, which were read after overnight incubation.

Results: Of 1959 samples tested, 1626 were reported as negatives and 280 as positives by both the Uro-Quick instrument and the reference method. 27 samples reported as positives by Uro-Quick only showed no growth upon subculture (true false positives), whereas 26 positive samples were detected solely by the reference method (sensitivity 91.50%, specificity 98.37%, positive predictive value 91.21%, negative predictive value 98.43%, accuracy 0.973).

Conclusions: The Uro-Quick system appears to be suited for rapid (usually 3 h) screening of significant bacteriuria with sufficient sensitivity and specificity.

P829 Controlled evaluation of automated urine flow cytometry cytobacteriologic analysis by using Sysmex UF-100 System for detection of urinary tract infection

B. Contempré, V. Boyart, G. Depré, M.J. Struelens. *Department of Microbiology, Hospital Erasme, Université Libre Bruxelles (ULB), Brussels, Belgium*

Objectives: The diagnostic performance of the Sysmex UF-100 automated urine analyzer was evaluated in comparison with urine sediment microscopic analysis (USM) and semi-quantitative culture.

Methods: 421 freshly collected urine samples were analyzed microscopically (USM) for erythrocytes, leukocytes, squamous epithelial cells, bacteria, and yeasts. Concomitantly, the specimens were analyzed by the Sysmex UF 100 system. Results were also compared to the number of bacterial colonies/mL after 24 h of culture.

Results: By using the USM as gold standard, abnormal leucocyturia and hematuria were detected with 100% and 87.5% sensitivity, and 67.1% and 71.3% specificity, respectively. Leukocyte, erythrocyte and squamous epithelial cell parameters, and also the second bacterial parameter High-bact, showed good USM/UF-100 measures of association (ranges of gamma statistics: 0.695–0.745). The UF-100 bacterial parameter Bact showed poor measure of association with the semi-quantitative USM bacterial counts. Significant bacteriuria defined as 10^4 and 10^5 CFU/mL was detected by the Bact parameter by the automated system with 70.6% and 87.0% sensitivity and 69.9% and 67.0% specificity respectively. Modifications of UF-100 algorithms to include the High-bact parameter in addition to the bact parameter significantly improved the sensitivity and specificity of bacteriuria, particularly with *E. coli*.

Conclusions: The UF-100 automated system showed acceptable diagnostic accuracy for cytologic urinalysis. Software changes to include multiple cytometric parameters would improve the performance for the detection of bacteriuria.

P830 Evaluation of a novel specimen transport system

U. Eibel, B. Sixl, G. Feierl, E. Daghofer, A. Grisold, E. Marth. *Institute of Hygiene, University of Graz, Austria*

Objectives: In our region, Transwab Amies clear (Medical Wire & Equipment Co. (Bath) Ltd) is the most widely used transport system for bacterial specimens from clinical material. Since a new transport system (Portagerm Amies Agar; bioMerieux) is being offered on the market we compared the two systems as to the recovery rate of fastidious and anaerobic organisms.

Methods: Suspensions of 12 different kinds of bacteria were prepared in physiologic NaCl (0.5 McFarland standard) as pure and mixed cultures, and both transport media were inoculated with these cell suspensions and placed at ambient temperature for 0, 24, 48 and 72 h. At these time points the swabs were removed and plated on specific culture media. After incubation for 24–48 h the recovery rate was determined.

Results: *Clostridium difficile* could not be recovered from either of the transport systems. There were decided differences between the systems concerning the recovery rates or the duration of survival of *Neisseria gonorrhoeae*, *Haemophilus influenzae* and *Peptostreptococcus anaerobius*, slight differences were found for *Clostridium perfringens* and *Legionella pneumophila* and no differences were found for *Campylobacter jejuni*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Shigella* spp., *Vibrio cholerae* and *Bacteroides fragilis*. Both systems resulted in a 10–100-fold reduction of the bacterial count for some of these organisms.

Conclusions: The novel transport system Portagerm Amies Agar allows for a longer survival of some of the tested fastidious and anaerobic organisms.

Serodiagnosis

P831 IgG EIA test in the diagnosis of human brucellosis

A.A. Sayiner, D. Özkaya, S. Gül, A. Zeytinoglu, I. Altuglu, A. Bilgiç. *Microbiology and Clinical Microbiology, Ege University Medical School, Izmir, Turkey*

Objectives: To assess the value of EIA for *Brucella*-specific IgG as compared to classic agglutination tests in the diagnosis of human brucellosis.

Methods: 61 Rose Bengal test (RB) positive and 15 RB negative sera were evaluated by serum agglutination test (SAT), 2-mercaptoethanol test (2ME), Coombs test and commercial *Brucella* IgG EIA test (Clark Lab., USA).

Results: 56 of 59 patient sera which were RB(+), SAT(+) and 2ME(+) were found to be positive by *Brucella* IgG EIA. Nine sera had 2ME titer of 20. Two of these were EIA negative and one was repeatedly equivocal, while the remaining six were EIA positive. There were 15 RB(-), SAT(-) and Coombs (-) sera, among which one gave a positive reaction with EIA test. Two patients who were RB(+) and SAT(+), but 2ME (-), were also found negative by *Brucella* IgG EIA. When RB, SAT and 2ME positivity were accepted as the gold standard, the sensitivity of the *Brucella* IgG EIA test was 94.9%, and the specificity was 94.4%. The IgG EIA test could determine all patients with 2ME titer 40.

Conclusions: The commercially available *Brucella* IgG EIA may replace the 2ME test for detecting specific IgG but is insensitive in patients with 2ME titer <40.

P833 Coupled particle scattering (COPALIS): new technology for simultaneous serodiagnosis

MJ. Ramos, A.Gonzalez-Ruiz, S. Perea, C.P. Alvarez, A.Gonzalez-Escalada, I. Martinez, A. Fuertes. *Hospital 12 de Octubre, Madrid, Spain*

Objectives: To compare the COPALIS technique (DiaSorin, Spain) versus EIA (Sera Quest, Diagnostic Grifols, S.A.) for the simultaneous detection of antibodies (Ab) against toxoplasmosis, rubella and cytomegalovirus.

Methods: 264 sera were tested for the simultaneous detection of toxoplasma, rubella and cytomegalovirus antibodies. COPALIS is a homogeneous immunoassay technology that permits simultaneous detection of multiple analytes in serum, plasma or whole blood. It differentiates monomeric latex particles from latex aggregates on the basis of their unique light scatter properties. Multiple simultaneous assays are configured by the use of mixtures of different-size latex microparticles. EIA test was considered the reference method. Additionally, we used a more sensitive latex agglutination test to rubella and toxoplasma (Pastorex, Sanofi Diagnostics Pasteur) and to cytomegalovirus (CMVERSUScan, Becton Dickinson) to evaluate disagreement results.

Results:

ELISA						COPALIS™					
Toxoplasma		Rubella		Cytomegalovirus		Toxoplasma		Rubella		Cytomegavirus	
+	-	+	-	+	-	+	-	+	-	+	-
64	200	220	44	204	60	69	195	225	39	204	60

Toxoplasma : Sensibility=97,5%;Specifity=94,59%;Agreement=95,47%.
Rubella : Sensibility=100%;Specifity=91,66%; Agreement=97,22%.
Cytomegalovirus : Sensibility= 96,96%;Specifity=83,87%; Agreement=94,48%.
Disagreement results were obtained in : toxoplasma 13 sera, rubella 9 sera, cytomegalovirus 2 sera.

Conclusions: COPALIS techique is a sensitive, specific and easy method for the simultaneous detection of Ab against toxoplasma, rubella and cytomegalovirus.

P834 Comparison of the microscopic agglutination test and the rapid microscopic agglutination test in the diagnosis of bovine leptospirosis

A P. Lage, P.H.S. Guimarães, A.O. Pellegrin, J.F. Figueiredo, E.C. Moreira. *Escola de Veterinária, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*

Introduction: Identification of *Leptospira interrogans* serovars infecting cattle in a herd is of major concern in the control of bovine leptospirosis, and is based on serovar-specific vaccines. The method recommended by OMS and OIE for the diagnosis of bovine and human leptospirosis is the microscopic agglutination test (MAT). In 1970, Ryu (1970) proposed a rapid microscopic agglutination test (RMAT) that reduces non-specific reactions.

Objectives: The present study compared the RMAT to the MAT in the detection of anti-*L. hardjo* antibodies in bovine serum.

Methods: A hundred and eighteen bovine sera from 10 herds were tested by MAT and RMAT. Seven-day-old *L. hardjo* cultures with a concentration of 100 microorganisms per microscopic field (400X) were used as antigen. Sera (100 µL) diluted 1/100 and mixed with the same volume of antigen were incubated at room temperature for 2 h in the MAT and for 5 min in the RMAT. Sera that presented 50% or more agglutination in a test were classified as positive for *L. harjo* antibodies. Positive sera were diluted from 1/100, on a twofold basis, up to a final titer.

Results: Forty-four sera were positive by the MAT and 40 by the RMAT. The mean titers found were 800 for MAT and 1600 for RMAT. The McNemar test showed no significant difference between the two tests (p=0.39) and the kappa statistics showed a good agreement between MAT and RMAT (kappa=0.78). When the final titers by the two methods were compared, no significant differences were found (t=-0.27, p=0.79) and RMAT was highly correlated with MAT ($r2$=0.81).

Conclusions: These results show that RMAT has a good agreement with MAT in the detection of *L. hardjo* antibodies in bovine sera, and has the advantage of being a faster test.

P835 Coupled particle light scattering (Copalis), a new technology for cytomegalovirus (CMV), rubella and toxoplasma serodiagnosis

A. Gonzalez Ruiz, M.J. Ramos, C. Alvarez, M.J. Domingo, M. Garau, A. Gonzalez-Escalada, M.C. Pazos, A.R. Noriega, A. Fuertes. *Microbiology Department, Hospital 12 de Octubre, Madrid, Spain*

Objectives: To compare the COPALIS System (DiaSorin, Spain) versus EIA (SeraQuest, Diagnostic Grifols, S.A.) for the detection of antibodies (Ab) against CMV, rubella and toxolasma.

Methods: One hundred and sixty-three sera were tested to CMV Ab, 265 to toxoplasma and 72 to rubella Ab. COPALIS is a homo-